

binding portion is selected from all or a DNA binding part of a nuclear receptor DNA binding protein.

54(New). A method according to claim 53 wherein when the nucleic acid binding portion is selected from a DNA binding portion of RAR $\alpha$  the chromatin inactivation portion being other than a portion of PLZF protein and is other than a portion of PML protein; or wherein the nucleic acid binding portion is other than a DNA binding portion of the *Saccharomyces cerevisiae* GAL4 protein.

55(New). A method according to claim 53 or 54 wherein the nucleic acid binding portion is a DNA binding portion.

56(New). A method according to claim 53 or 54 wherein the nucleic acid binding portion is an RNA binding portion and the site present in a eukaryotic genome is a nascent RNA being transcribed from DNA.

57(New). A method according to claim 53 or 54 wherein when the nucleic acid binding portion is selected from all or a DNA binding part of a nuclear receptor DNA binding protein the chromatin inactivation portion facilitates histone deacetylation.

58(New). A method according to claim 55 wherein when the nucleic acid binding portion is selected from all or a DNA binding part of a nuclear receptor DNA binding protein the chromatin inactivation portion facilitates histone deacetylation.

59(New). A method according to claim 53 or 54 wherein when the nucleic acid binding portion is selected from all or a DNA binding part of a nuclear receptor DNA binding protein the chromatin inactivation portion being selected from all or a portion of a component of a histone deacetylation (HDAC) complex or all or a portion of a polypeptide which binds to or facilitates the recruitment of a HDAC complex.

60(New). A method according to claim 55 wherein when the nucleic acid binding portion is selected from all or a DNA binding part of a nuclear receptor DNA binding protein the chromatin inactivation portion is selected from all or a portion of a component of a histone deacetylation (HDAC) complex or all or a portion of a polypeptide which binds to or facilitates the recruitment of a HDAC complex.

61(New). A method according to claim 57 wherein when the nucleic acid binding portion is selected from all or a DNA binding part of a nuclear receptor DNA binding protein the chromatin inactivation portion is selected from all or a portion of a component of a histone deacetylation (HDAC) complex or all or a portion of a polypeptide which binds to or facilitates the recruitment of a HDAC complex.

62(New). A method according to claim 59 wherein the component of the HDAC complex or the polypeptide which binds to or facilitates the recruitment of a HDAC complex is selected from PLZF, N-CoR, SMRT, Sin3, SAP18, SAP30 and HDAC.

63(New). A method according to claim 60 wherein the component of the HDAC complex or the polypeptide which binds to or facilitates the recruitment of a HDAC complex is selected from PLZF, N-CoR, SMRT, Sin3, SAP18, SAP30 and HDAC.

64(New). A method according to claim 61 wherein the component of the HDAC complex or the polypeptide which binds to or facilitates the recruitment of a HDAC complex is selected from PLZF, N-CoR, SMRT, Sin3, SAP18, SAP30 and HDAC.

65(New). A method according to claim 62 wherein the chromatin inactivation portion is selected from all or a N-CoR- or SMRT-binding part of PLZF.

66(New). A method according to claim 63 wherein the chromatin inactivation portion is selected from all or a N-CoR- or SMRT-binding part of PLZF.

67(New). A method according to claim 64 wherein the chromatin inactivation portion is selected from all or a N-CoR- or SMRT-binding part of PLZF.

68(New). A method according to claim 62 wherein the chromatin inactivation portion is selected from all or an enzymatically active part of a HDAC.

69(New). A method according to claim 63 wherein the chromatin inactivation portion is selected from all or an enzymatically active part of a HDAC.

70(New). A method according to claim 64 wherein the chromatin inactivation portion is selected from all or an enzymatically active part of a HDAC.

71(New). A method according to claim 55 wherein when the chromatin inactivation portion is selected from all or a N-CoR- or SMRT-binding part of PLZF the DNA binding portion is selected from all or a DNA-binding part of a zinc-finger DNA binding protein or all or a DNA-binding part of a helix-turn-helix DNA binding protein.

72(New). A method according to claim 71 wherein the DNA binding portion is selected from all or a DNA-binding part selected from an animal or plant DNA binding protein.

73(New). A method according to claim 71 wherein the DNA binding portion is selected from all or a DNA-binding part selected from a bacterial or yeast DNA binding protein engineered to bind plant or animal genome.

74(New). A method according to claim 53 wherein the DNA binding portion is selected from all or a DNA binding part of a steroid hormone receptor protein.

75(New). A method according to claim 74 wherein the steroid hormone receptor protein is selected from all or a DNA-binding portion of estrogen receptor (ER) or all or a DNA-binding portion of androgen receptor (AR).

76(New). A method according to claim 56 wherein the RNA binding protein binds to nascent RNA expressed from proviral DNA.

77(New). A method according to claim 76 wherein the RNA binding protein is selected from tat or a tat-like protein or an RNA-binding portion thereof.

78(New). A method according to claim 53 wherein the nucleic acid binding portion and the chromatin inactivation portion are fused.

79(New). A method according to claim 53 wherein the eukaryotic cell is selected from an animal cell and is contained within an animal or a plant cell and is contained within a plant.

80(New). A method according to claim 53 wherein the expression of a selected gene in a human is suppressed.

81(New). A method according to claim 53 wherein the expression of a plurality of selected gene is suppressed.

82(New). Use in the manufacture of an agent for suppressing the expression of the selected gene in a eukaryotic cell selected from (a) a polypeptide comprising a nucleic acid binding portion which binds to a site at or associated with the selected gene which site is present in a eukaryotic genome and a chromatin inactivation portion, or (b) a polynucleotide encoding a polypeptide comprising a nucleic acid binding portion which binds to a site at or associated

with a selected gene which site is present in a plant or animal genome and a chromatin inactivation portion selected from all or a N-CoR- or SMRT-binding part of PLZF or wherein the nucleic acid binding portion is selected from all or a DNA binding part of a nuclear receptor DNA binding protein.

83(New). Use according to claim 82 wherein the agent is a medicament for suppressing the expression of a selected gene in an animal.

84(New). A method of treating a patient in need of suppression of the expression of a selected gene, the method comprising a step selected from

- (a) administering to the patient an effective amount of a polypeptide comprising a nucleic acid binding portion which binds to a site at or associated with the selected gene and a chromatin inactivation portion; and
- (b) administering to the patient an effective amount of a polynucleotide encoding a polypeptide comprising a nucleic acid binding portion which binds to a site at or associated with the selected gene and a chromatin inactivation portion.

85(New). Use in the manufacture of a medicament for suppressing the expression of the selected gene in a eukaryotic cell selected from a polypeptide comprising a nucleic acid binding portion which binds to a site at or

associated with the selected gene which site is present in a eukaryotic genome and a chromatin inactivation portion, or (b) a polynucleotide encoding a polypeptide comprising a nucleic acid binding portion which binds to a site at or associated with a selected gene which site is present in a plant or animal genome and a chromatin inactivation portion selected from all or a N-CoR- or SMRT-binding part of PLZF or wherein the nucleic acid binding portion is selected from all or a DNA binding part of a nuclear receptor DNA binding protein.

86(New). A composition selected from pharmaceutical compositions and compositions used in medicine selected from (a) a polypeptide comprising a nucleic acid binding portion which binds to a site at or associated with the selected gene which site is present in a eukaryotic genome and a chromatin inactivation portion, or (b) a polynucleotide encoding a polypeptide wherein the chromatin inactivation portion is selected from all or a N-CoR- or SMRT-binding part of PLZF or wherein the nucleic acid binding portion is selected from all or a DNA binding part of a nuclear receptor DNA binding protein.

87(New). A composition according to claim 86 including a pharmaceutically acceptable carrier.

88(New). A composition according to claim 86 wherein the composition is a polypeptide.

89(New). A composition according to claim 86 wherein the composition is a polynucleotide encoding a polypeptide.

90(New). A polynucleotide encoding a polypeptide according to claim 89 wherein the polynucleotide comprises a promoter operably linked to allow expression of the polypeptide.

91(New). A polynucleotide according to claim 90 wherein the promoter is an inducible promoter.

92(New). A polynucleotide according to any one of claims 89-91 wherein said polynucleotide is included in a vector.

93(New). A polynucleotide according to claim 92 wherein said vector is an animal cell vector.

94(New). A polynucleotide according to claim 92 wherein said vector is a plant cell vector.

95(New). A polynucleotide according to claim 92 wherein said vector is a viral vector.

96(New). A polynucleotide according to claim 93 wherein said vector is a viral vector.

97(New). A polynucleotide according to claim 94 wherein said vector is a viral vector.

98(New). A polynucleotide according to claim 92 wherein said vector is a plasmid vector.

99(New). A polynucleotide according to claim 93 wherein said vector is a plasmid vector.



100(New). A polynucleotide according to claim 94 wherein said vector is a plasmid vector.

101(New). A host cell comprising a polynucleotide according to claim 86.

102(New). A host cell according to claim 101 wherein said host cell is a bacterial cell.

103(New). A host cell according to claim 101 wherein said host cell is an animal cell.

104(New). A host cell according to claim 101 wherein said host cell is a plant cell.

105(New). A host cell according to claim 103 wherein said host cell is contained in an animal.

106(New). A host cell according to claim 104 wherein said host cell is contained in a plant.

#### **REMARKS**

In accordance with the above amendments, certain headings have been added in the specification and the section entitled "BRIEF DESCRIPTION OF THE DRAWINGS" have been added in conformance with generally accepted traditional U.S. practice.

The original slate containing claims 1-52 has been canceled in favor of a new slate containing claims 53-106 to bring the wording and form of the claims more into compliance with U.S. rules of practice.